



Inspiring Solutions. Since 1989



## **ELFOEnergy Edge EVO**

### **WSAN-YMi 21-141**

Product presentation

A Group Company of



# New hydronic range

## NEW ELFOEnergy EVO R-32 SERIES



5 kW

**ELFOEnergy EDGE EVO**



**ELFOEnergy SHEEN EVO**



90 kW

**ELFOEnergy STORM EVO**



# New hydronic range

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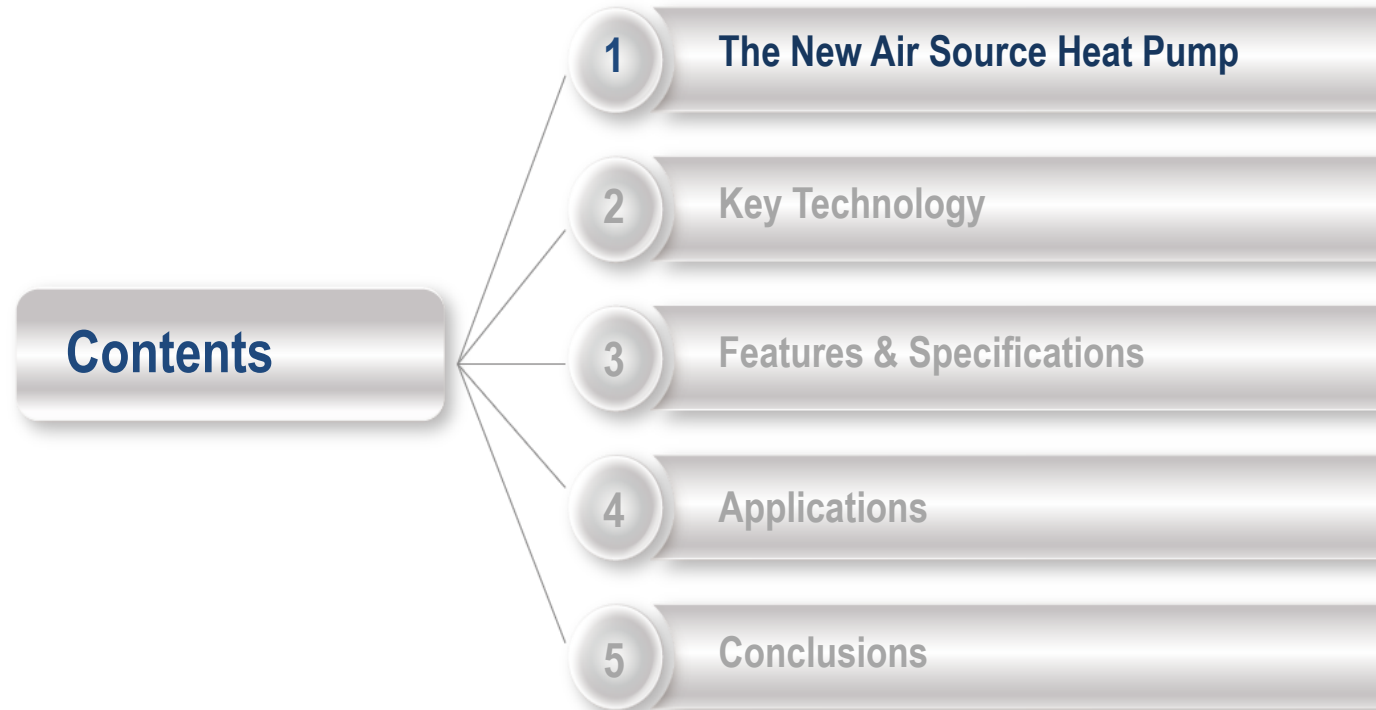


90 kW

**ELFOEnergy STORM EVO**



# ELFOEnergy Edge EVO

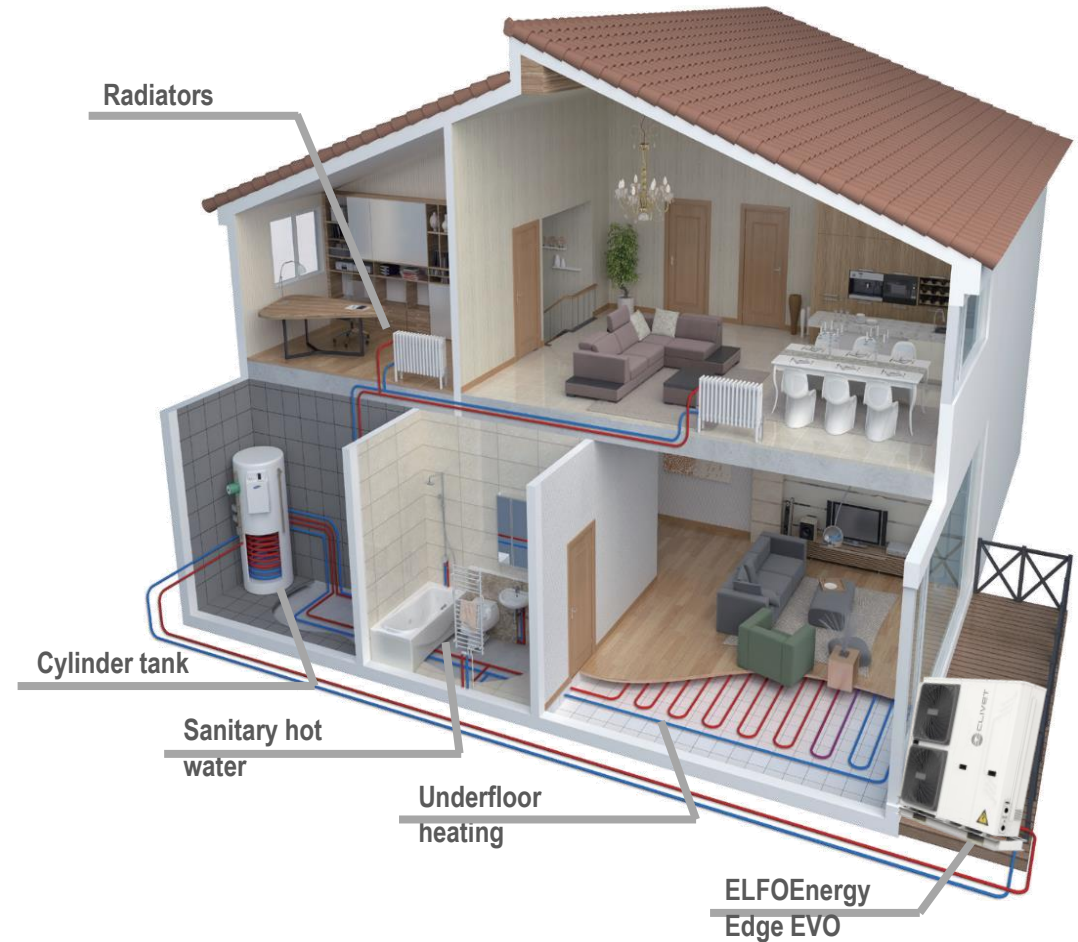




# ELFOEnergy Edge EVO: the new air source Heat Pump

## ALL IN ONE SOLUTION FOR ANY APPLICATION: Cooling, Heating, Domestic hot water

- ELFOEnergy Edge is the integrated system that heats and cools space, as well as produces domestic hot water.
- It offers **total comfort solution** all year round
- The system can **completely replace** the traditional gas or fuel boilers. Furthermore, it is also able to work **together** with them.



# ELFOEnergy Edge EVO: new refrigerant R-32



ELFOEnergy Edge EVO is the sustainable solution for the all year round comfort thanks to the new ecological **refrigerant R-32**:

- Low GWP (Global Warming Potential): -70% compared to R410A
- Better performance under severe conditions
- Less charged volume is needed in the system
- Higher heat transfer coefficient

## BEST FEATURES AND MOST ADVANCED TECHNOLOGY

- **New R-32 refrigerant**
- **10** models are available for ELFOEnergy Edge with **5-30 kW** range
- **A++/A+++** Class Heating LT (LWT 35°C) / **A+/A++** Class Heating MT (LWT 55°C)
- **SEER up to 4,99**: effective as a **Chiller**
- Twin rotary DC inverter compressor and DC inverter fans
- Self-contained **integrated system**: built-in hydronic module
- Operation Range **down to -25°C**
- **Silent mode** and **super silent mode** for night operation
- Hybrid capability compatible with **solar panel** or **back-up boiler**
- Connectivity via **APP** or **ELFOControl<sup>3</sup>**

Nominal heating capacity:  
(A7/W45) from **5 to 30 kW**




Nominal cooling capacity:  
(A35/W7) from **5 to 30 kW**



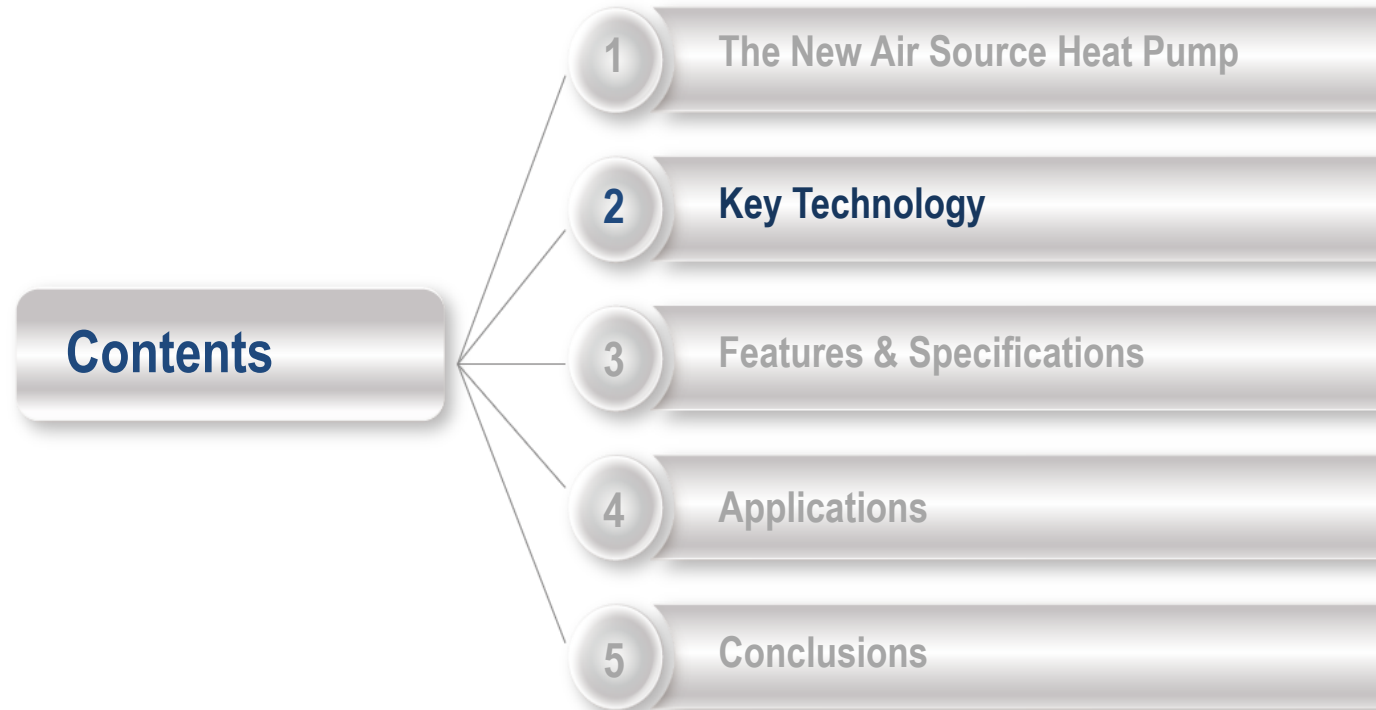
DC Inverter



# Wide capacity range to meet every capacity demand

| Series                         | WSAN-YMi 21-141  |    |    |  |    |    |   |     |     |     |
|--------------------------------|--|----|----|--|----|----|---|-----|-----|-----|
| Size                           | 21   | 31 | 41 | 61   | 71 | 81 | 91  | 101 | 121 | 141 |
| Heating Capacity [kW] (A7/W45) | 5  | 7  | 9  | 12   | 14 | 16 | 18  | 22  | 26  | 30  |
| Appearance                     | <br>Foot print <b>0,48m<sup>2</sup></b> |    |    | <br>Foot print <b>0,57m<sup>2</sup></b> |    |    | <br>Foot print <b>0,59 m<sup>2</sup></b> |     |     |     |
| 230/1/50                       | ●  | ●  | ●  | ●  | ●  | ●  |   |     |     |     |
| 400/3/50+N                     |  |    |    | ●  | ●  | ●  | ●   | ●   | ●   | ●   |





# Key Technology

## ELFOEnergy Edge EVO is the new energetic reference for the heat pump, bringing:

- **DC Inverter technology**, ideal for the operation at partial load.
- **Electronic expansion valve**, that quickly and precisely adapts to the effective load required.
- The **plate heat exchanger** maximizes the thermal efficiency thanks to large exchange surfaces .
- High efficiency brushless **DC inverter pump**, integrate in the hydronic module.
- The **Hydrophilic Coil** ensures a better cleaning maintaining thermal exchange efficiency and reduced defrost time

**A Class in Heating**  
A7/W45

**ErP Class:**  
A++/A+++ @W35°C  
A++ @W55°C

**SEER up to 4,99**  
A35/W7

**...with LOW SOUND  
OPERATION!**

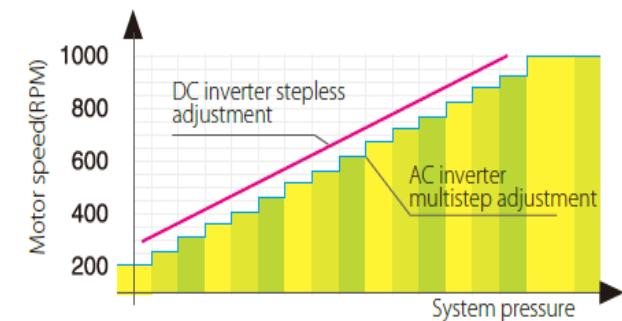
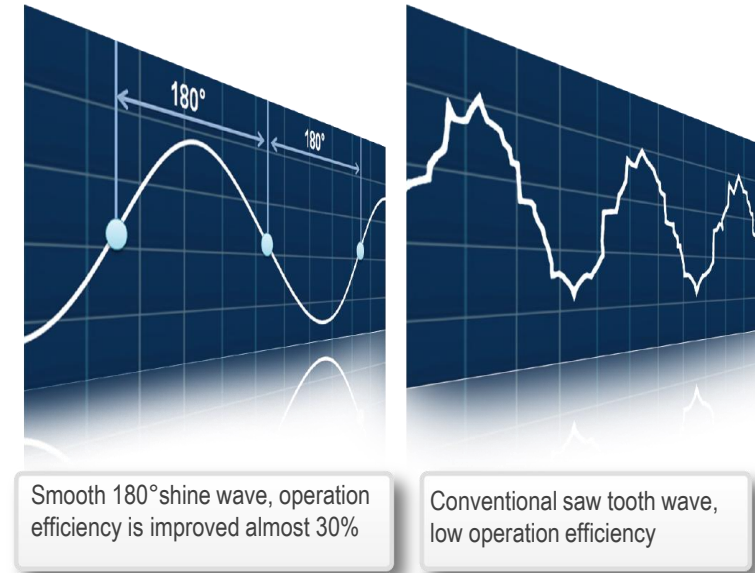
# Full DC Technology

## DC inverter twin rotary compressor

- ✓ New designed compressor with Permanent Magnets:
  - low working sound
  - wide working frequency.
- ✓ Full DC frequency conversion system that dramatically **reduces power consumption by more than 30%**.

## DC inverter fan motor

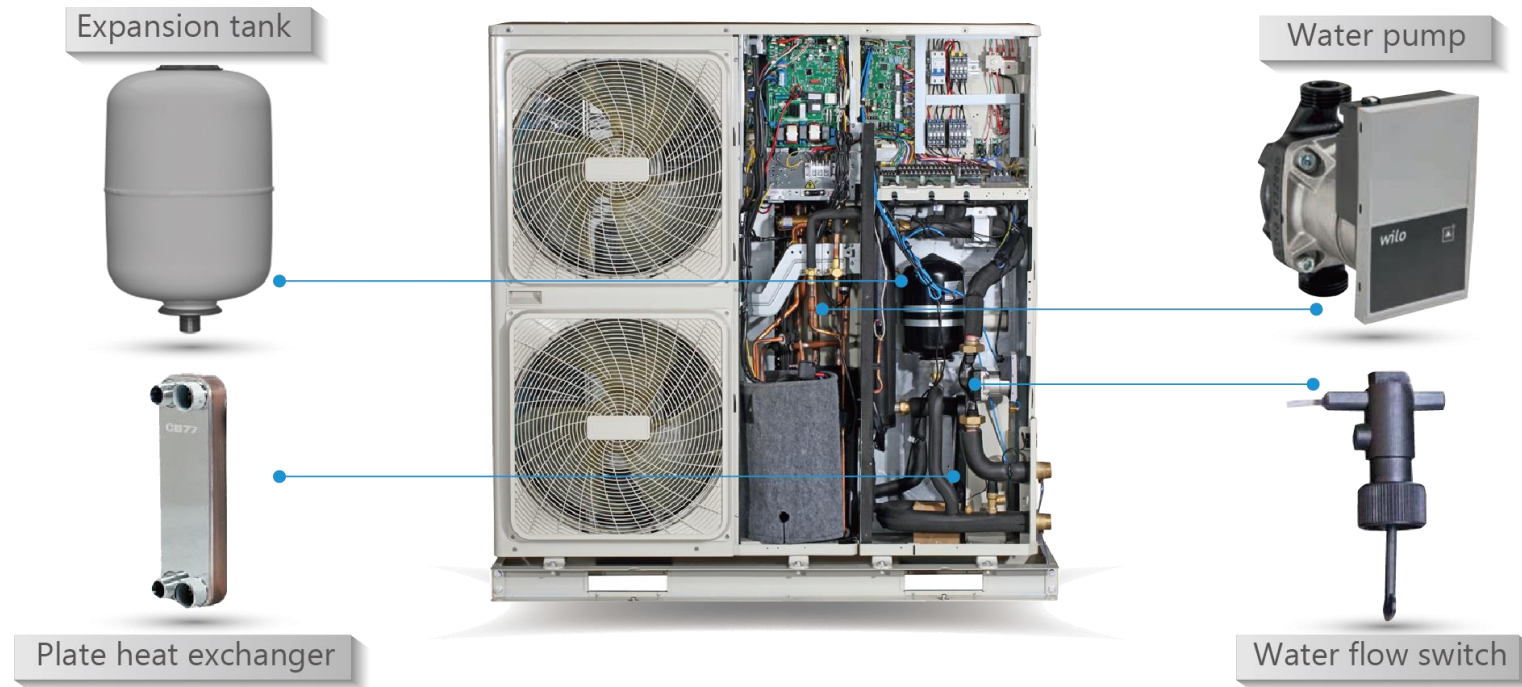
- ✓ Brushless DC (BLDC) fan motor helps to meet up-to-date heating and cooling demands with **low noise fan**, as well **low power consumption**.
- ✓ Fan blower and fan guard designed with **CFD air flow technology** (Computation Fluid Dynamics), bringing quiet and high efficient operation.



# Hydronic module

All hydraulic components, e.g. circulation pump and expansion vessel, **are included in the unit** to guarantee:

- High reliability
- Space reduction
- Quicker and easier maintenance of the hydraulic circuit

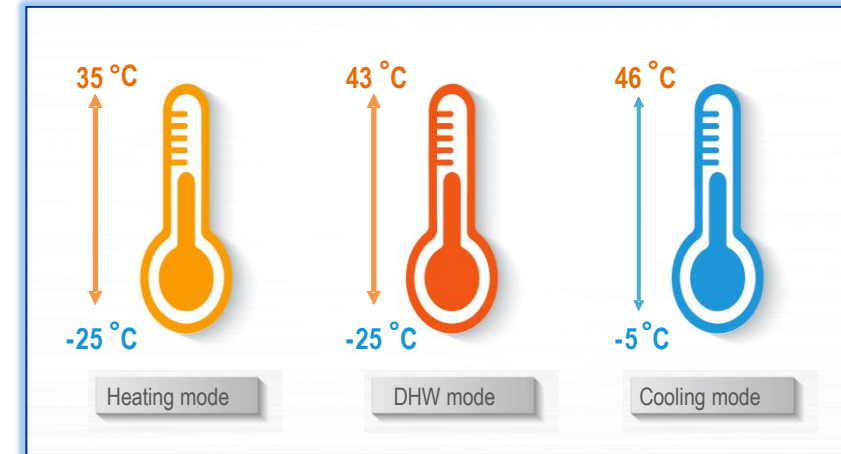




# Extended Operating Range

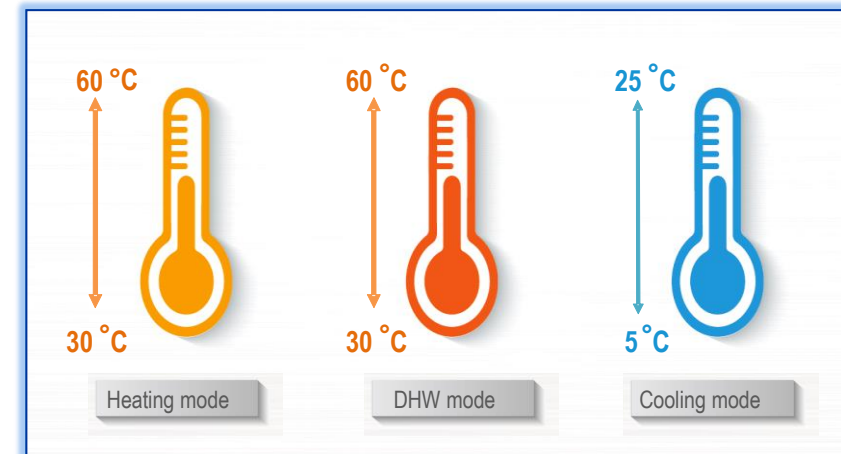
## Outdoor air temperature operating range

ELFOEnergy Edge is made up of an inverter compressor optimally operated according to the outdoor temperature, offering **heating capacity of 80% at  $-7^{\circ}\text{C}$**  and **reliable anti-freezing protection at  $-25^{\circ}\text{C}$** .



## Leaving water temperature range

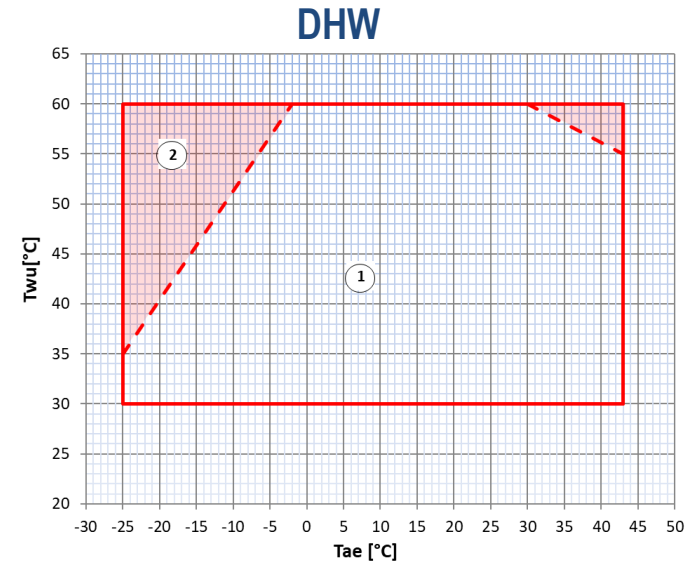
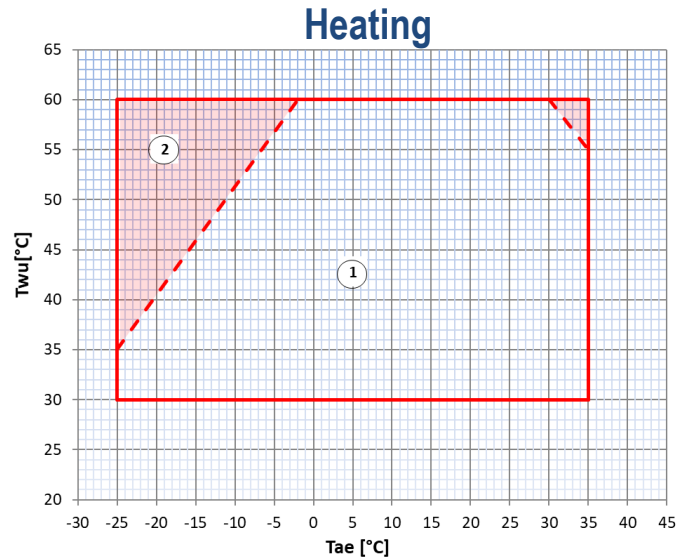
ELFOEnergy Edge can supply a **minimum water temperature** in cooling mode of  $5^{\circ}\text{C}$  and a maximum leaving temperature in heating mode of  $60^{\circ}\text{C}$ .\*



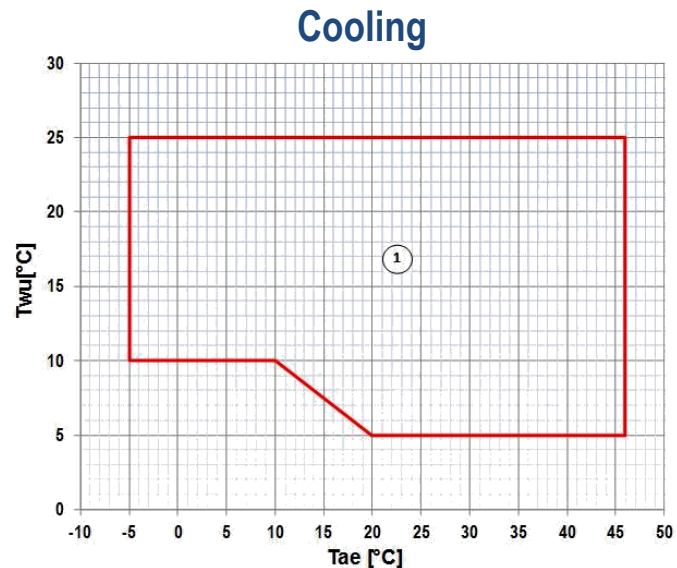
\* The leaving water temperature range will differ when setting different mode.

# Extended Operating Range

Hot water production down to  $-25^{\circ}\text{C}$  air temperature!



DHW at  $60^{\circ}\text{C}$  from  $-2^{\circ}\text{C}$  to  $30^{\circ}\text{C}$  of air temperature!



$T_{wu}$  [°C] = Leaving exchanger water temperature

$T_{ae}$  [°C] = External exchanger inlet air temperature

- ① = Normal operating range
- ② = Operating range with only back-up heater\* or additional heating source

- Back-up heater supplied as a separate option for size 21-41. Integrated or as a separate option for size 61-81.

# Certifications



**Eurovent certification**



**Keymark mark**  
From December 2020 for sizes  
91-141



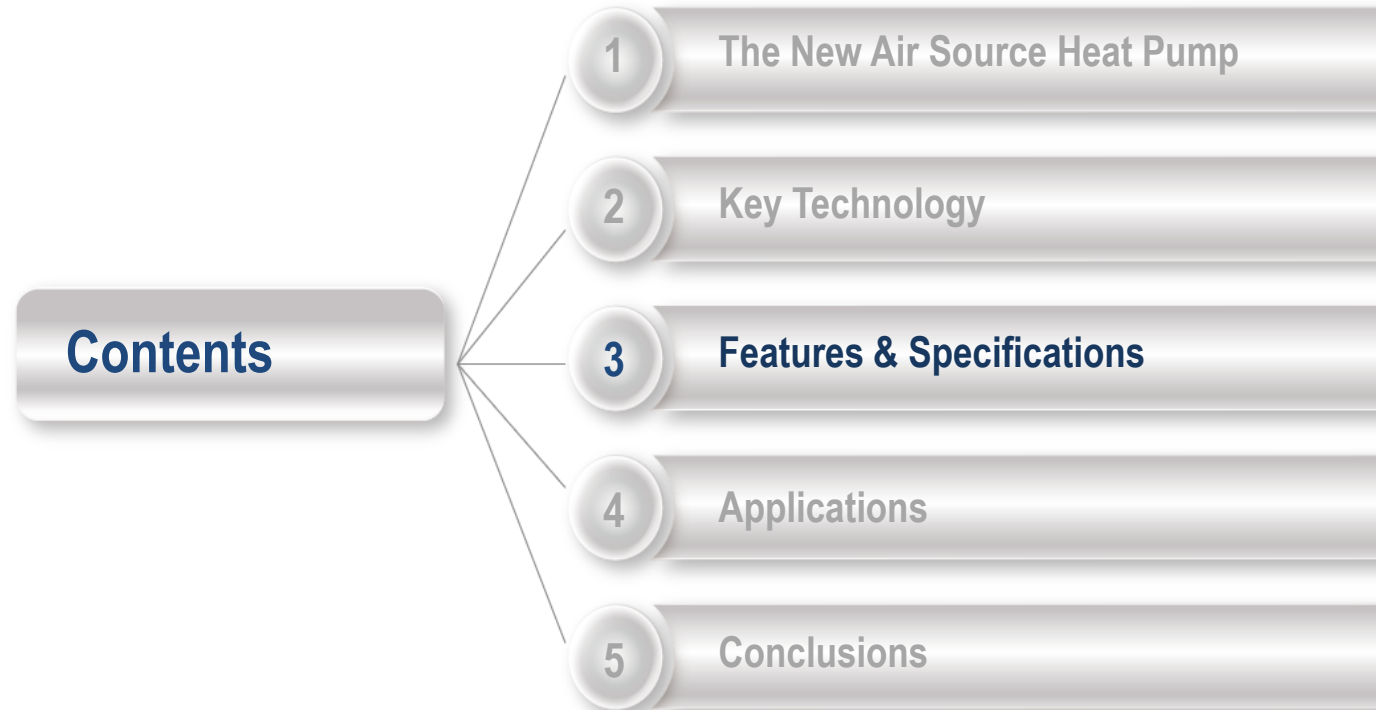
**EHPA Quality Label**  
Only for sizes 21-81



The Certification Mark for Onsite Sustainable Energy Technologies

**MCS mark**  
Only for sizes 21-81

# ELFOEnergy Edge EVO





# Features & Specifications

## Newly designed wired remote User Interface

New generation remote User Interface , for internal installation, that guarantees a **complete control solution**:

- ON/OFF unit
- Operation Mode setting: cooling/heating/AUTO
- DHW setting
- Temp. setting: water outlet temp, room temp
- Time setting: 12H/24H
- Timer ON/OFF setting, Day/Weekly
- Display space heating/cooling set temperature
- Water tank temperature
- Display components status
- Query, malfunction Code, Parameter
- Test mode setting
- Two multi-authorization control levels
- **Modbus connection**



\* Unit is managed **only** with User Interface

# Features & Specifications

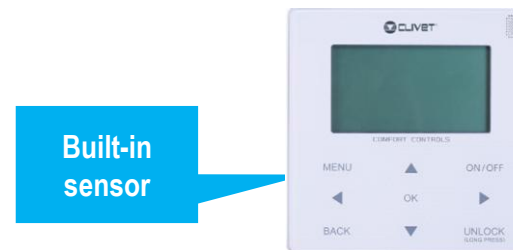
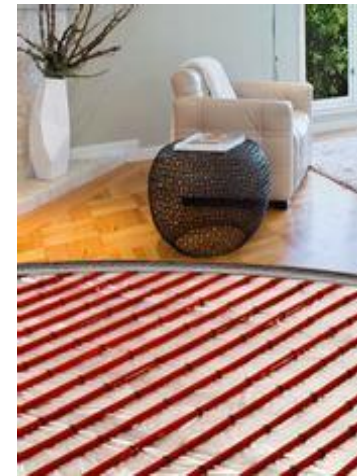
## Two zones control (high and low temperature)

The unit can manage **two different set-points**:

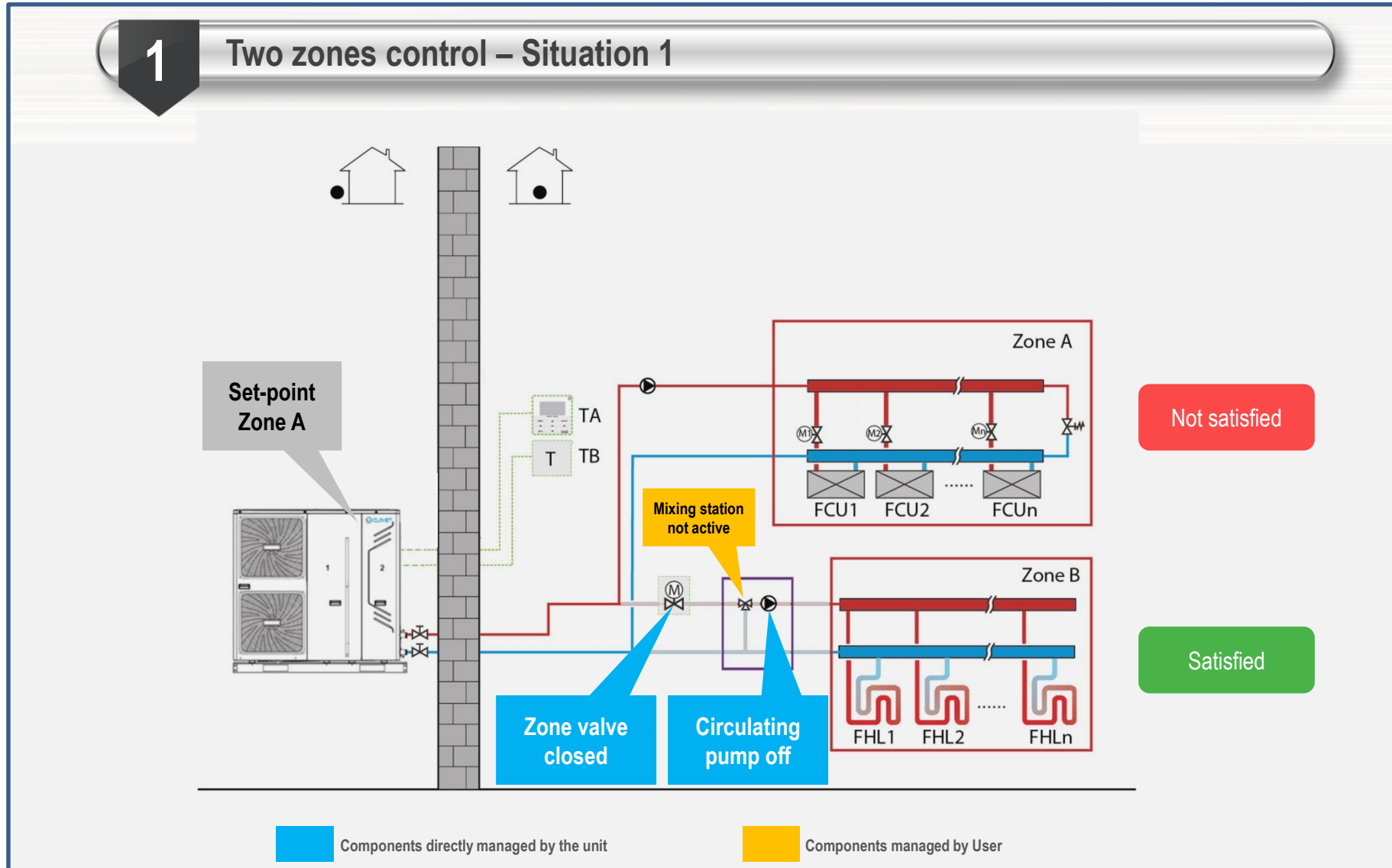
- **Zone A:** High temperature zone controlled by thermostat (User interface)
- **Zone B:** Low temperature zone controlled by thermostat (user supply)

The system has to be set up with:

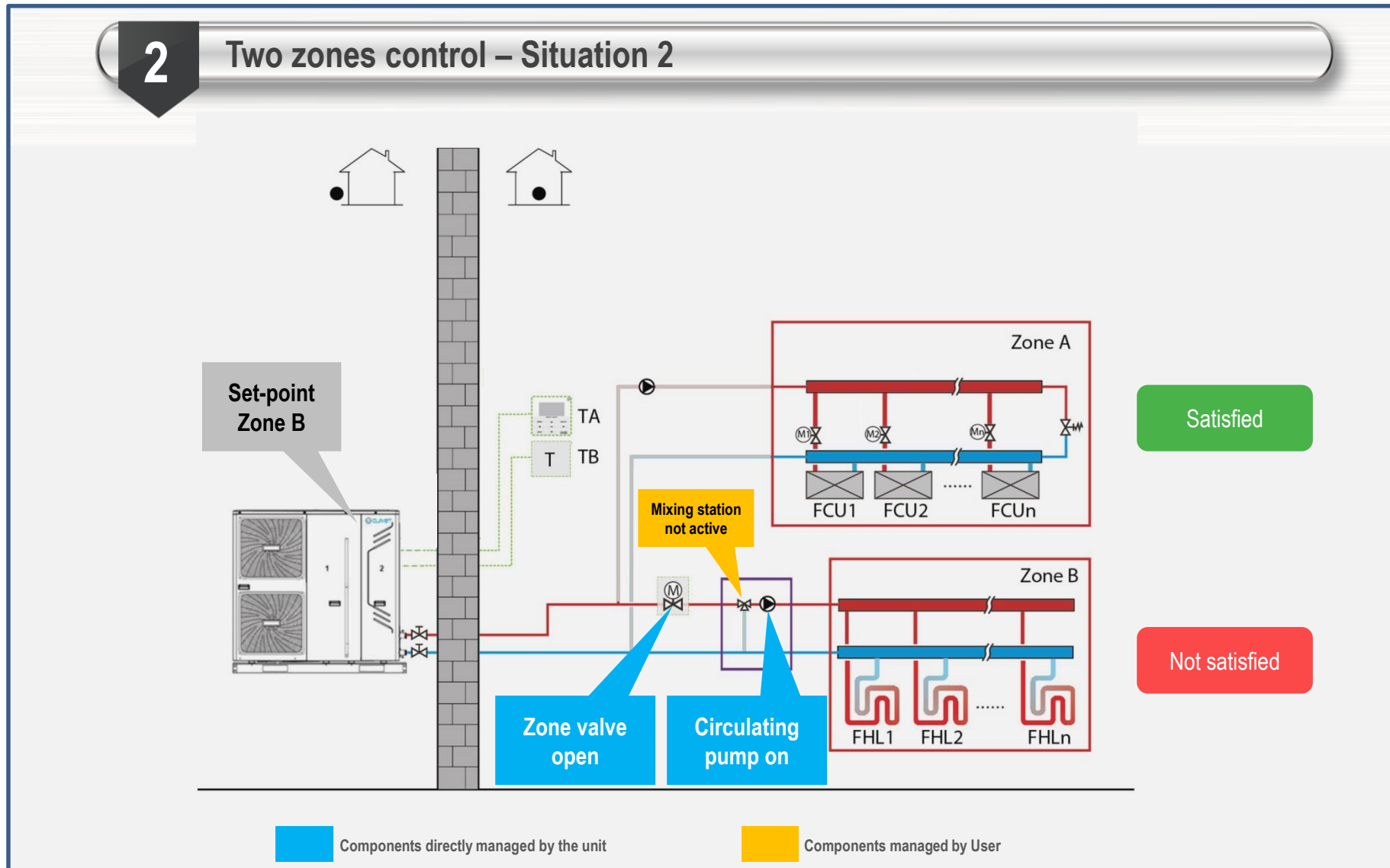
- Mixing station (not managed by the unit)
- Zone valve (managed by the unit)
- Zone B circulating pump (managed by the unit)



# Typical Applications

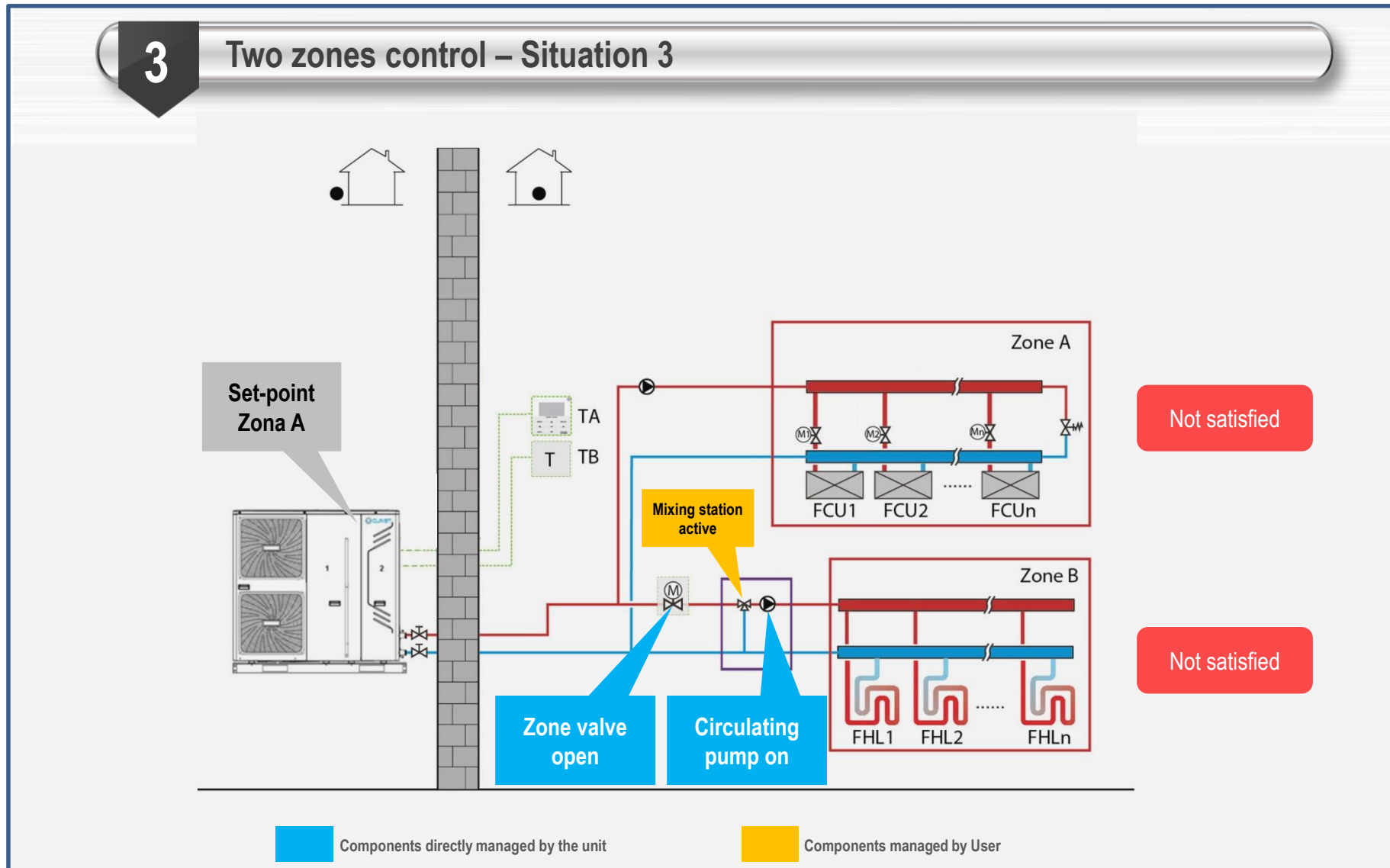


# Typical Applications





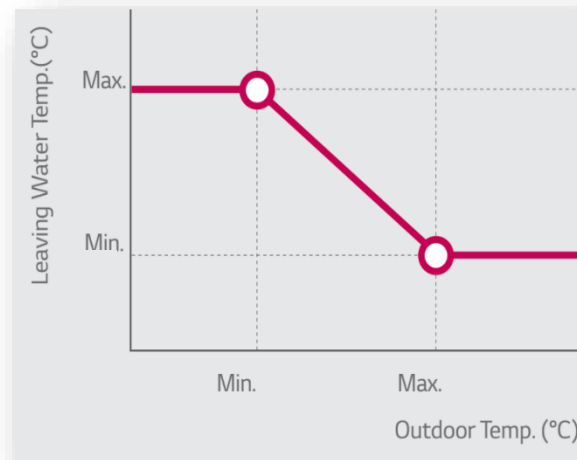
# Typical Applications



# Features & Specifications

## Climatic compensation with outdoor air temperature

In cooling mode, the user can set the **Climate correlation curve** according to its needs, then system will set the outlet water temperature according to the outdoor ambient temperature automatically.

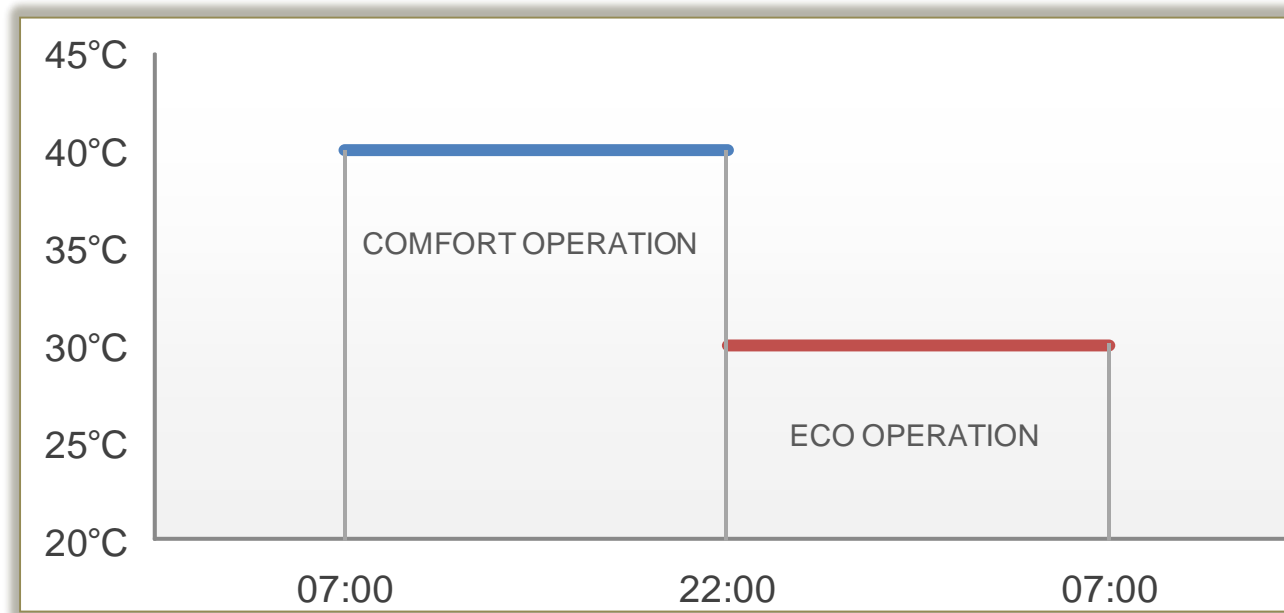


- **Cooling operation:** if outdoor temperature increases outlet water set-point will decrease automatically to allow a higher cooling capacity to the system.
- **Heating operation:** if outdoor temperature decreases, heating capacity supplied will increase automatically in order to keep comfortable heating performance.

# Features & Specifications

## ECO Mode

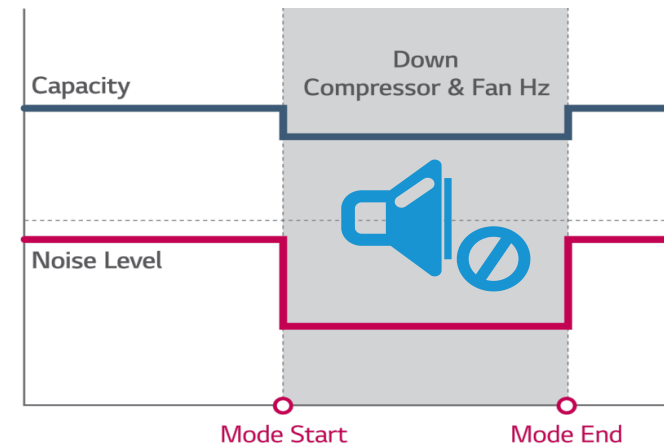
- In heating mode: during the daytime (7:00 – 22:00) the setting leaving water temperature will be **40°C** in order to keep comfortable heating performance.
- And during the night time (22:00 – 7:00) the setting leaving water temperature will be **30°C** in order to save energy.
- Above duration (7:00 – 22:00 – 7:00) as well the water temperature (e.g. **30°C** or **40°C**) **can be set on the User Interface automatically.**



# Features & Specifications

## Silent mode

- Silent mode operation can reduce the noise level specially during the night time.
- When the silent mode operation starts, the outdoor unit will reduce the compressor and fan motor speed to lower the noise.
- The default silent mode operation duration is settable .
- **Two silent mode levels** are available: up to **-6 dB(A)** can be reduced compared with normal operation.
- There are two methods to set the silent mode: ***Silent mode all time*** and ***Silent mode in timer*** (two different timers can be set).



# Features & Specifications

## Priority DHW mode (fast domestic hot water)

- To immediately supply hot water ASAP.
- When the fast DHW mode operation starts, the outdoor unit will run the compressor and fan motor with full load.
- The DHW will have the first priority and stop running any other mode .
- Back-up electrical heater will run accordingly.



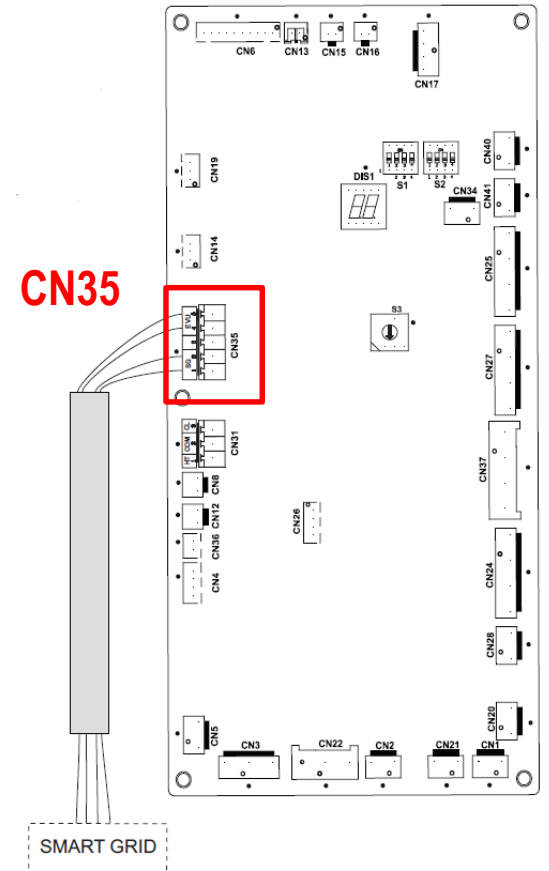


# Features & Specifications

## Smart-grid and photovoltaic function

- EVU signal for the integration of the unita in a Smart-Grid.
- SG signal for operation in combination with photovoltaic panels.
- With unit forced in DHW mode the set-point is automatically set to 70°C.

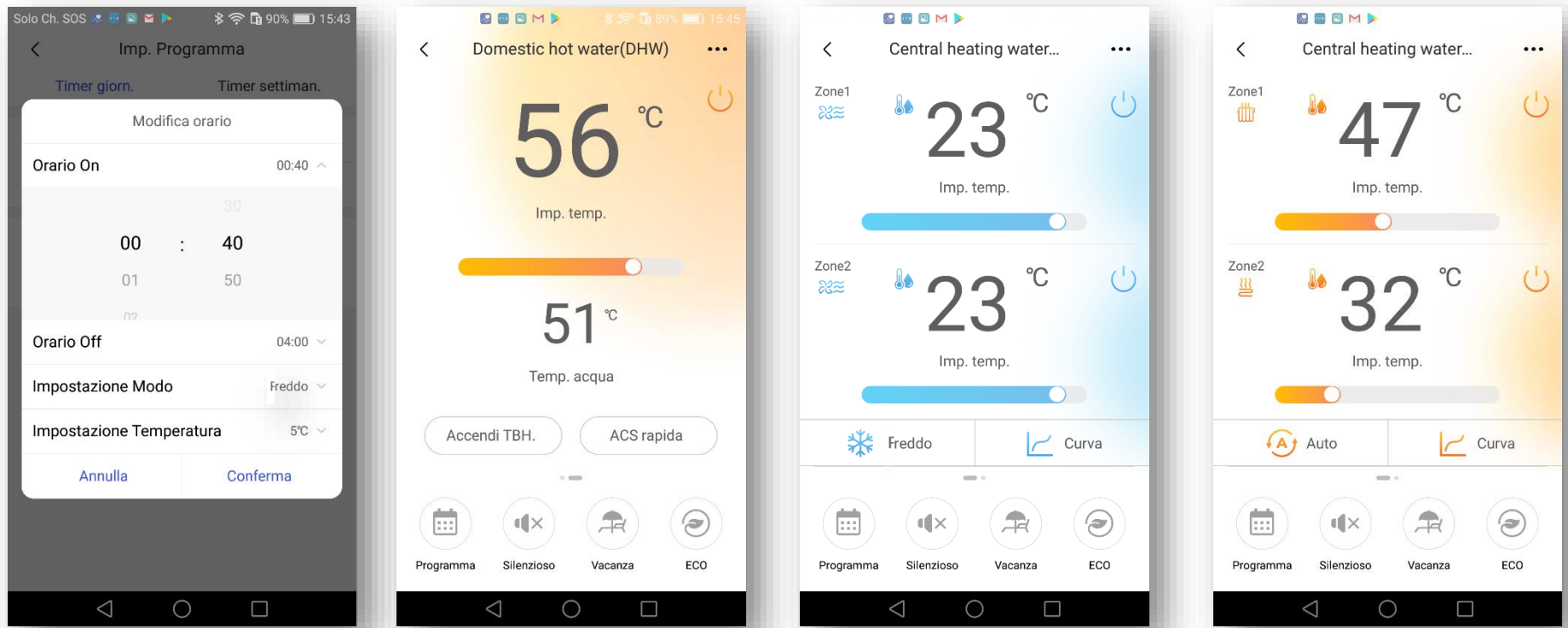
|                            | EVU | SG       |
|----------------------------|-----|----------|
| Normal unit operation      | OFF | ON       |
| Unit is switched off       | OFF | OFF      |
| Unit is forced in DHW mode | ON  | ON o OFF |

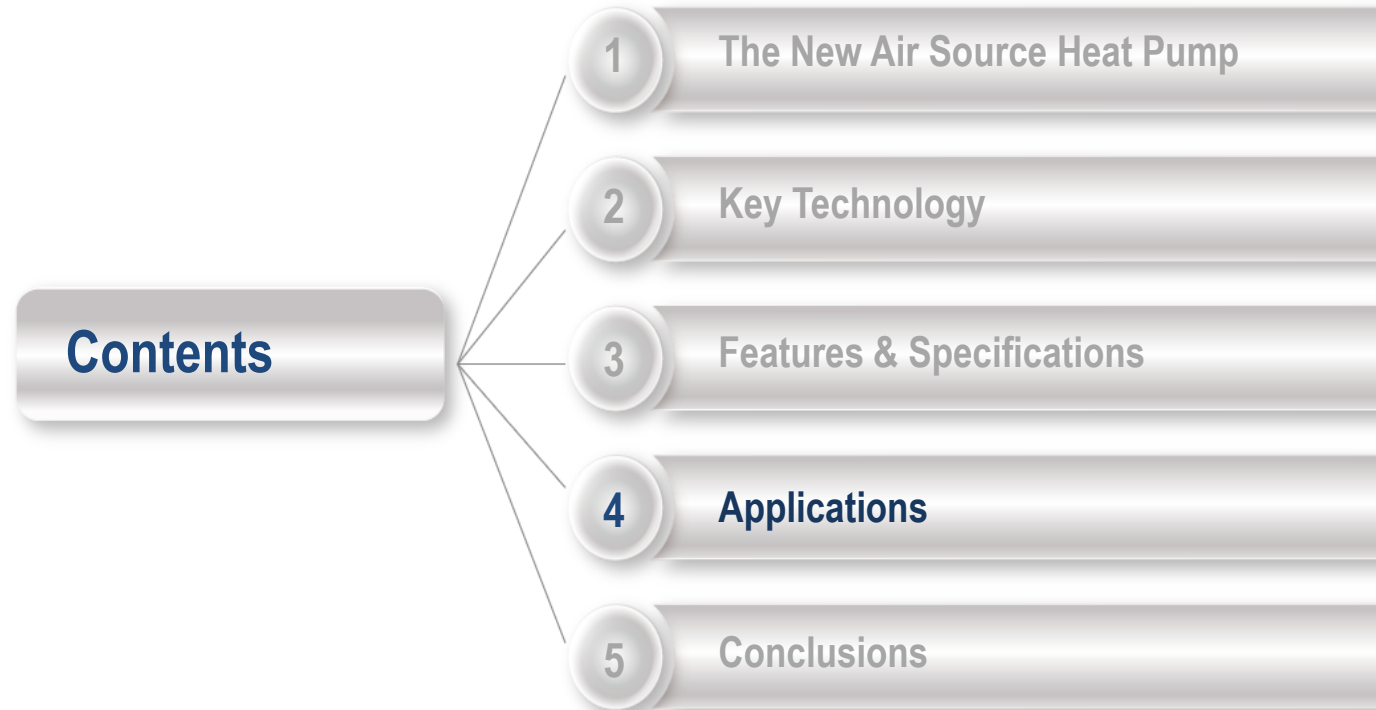


# Connectivity

## APP for a smart control

- A simply a intuitive management from your smartphone
- Download it on GooglePlay → **MSmartLife**

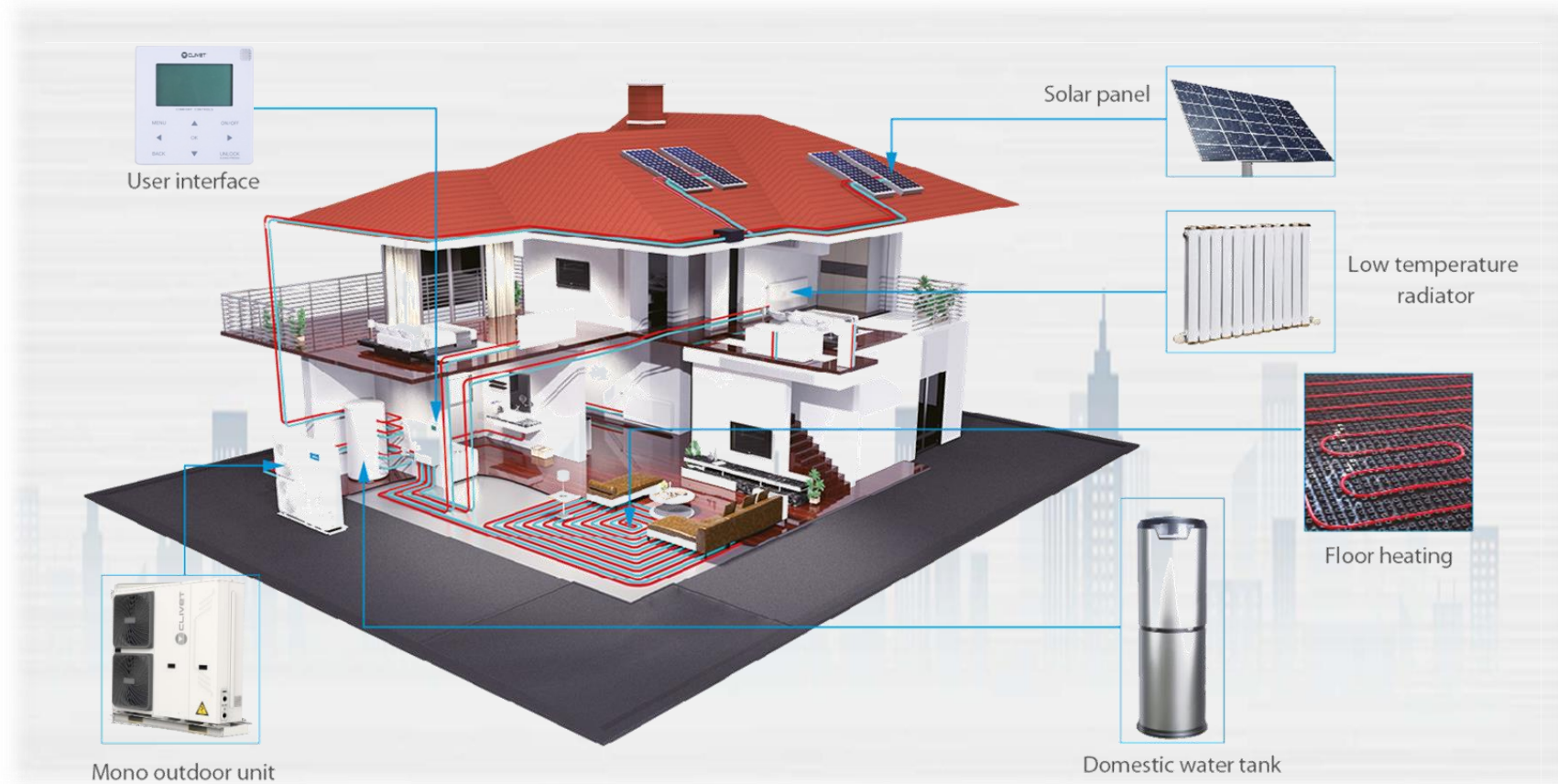




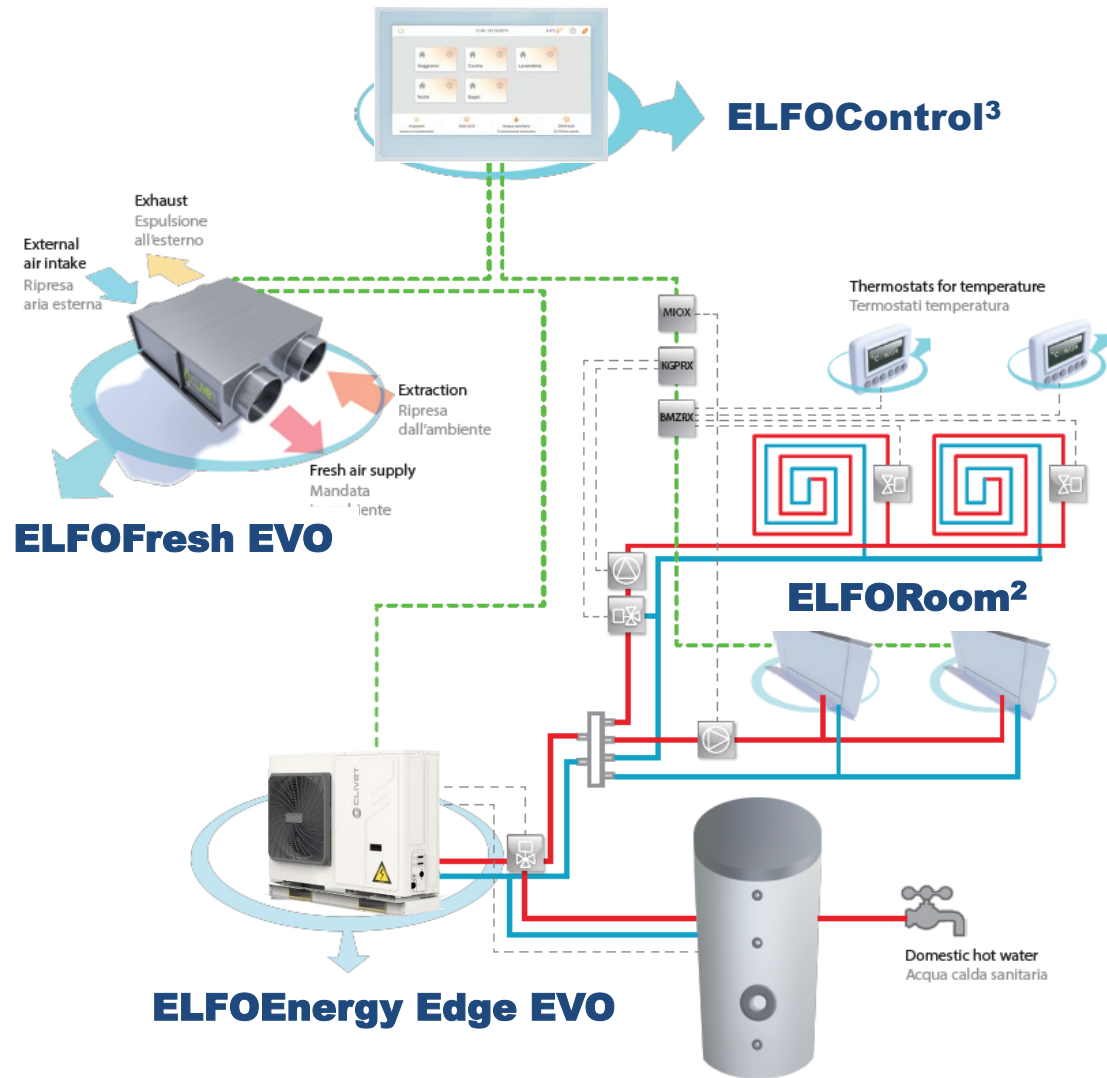
# Applications

To guarantee the **maximum flexibility**, **ELFOEnergy Edge EVO** can be combined together with radiant panels, fancoil units, radiators and domestic water tank.

It can also **be connected** and **manages** solar collectors, gas furnace, boiler and other heat sources.



# Combination with ELFOControl<sup>3</sup>



**ELFOControl<sup>3</sup>** is the advanced control system to manage the operation of the entire system.

- **High seasonal efficiency** thanks to the possible algorithm optimization by the control of all the system components
- **Optimization** of units efficiency and operation
- **Comfort improvement** (temperature, humidity, air quality, domestic hot water)
- **Simply** to use and complete system management
- **Operation safety** thanks to the energy source choice most suitable for each ambient condition.

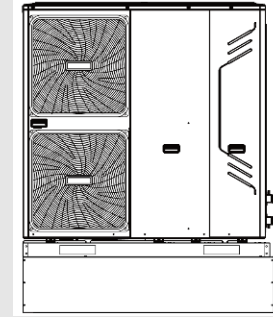


# Typical Applications - Accessories

- **Buffer tank**

60-liter tank in painted sheet metal, thermally insulated. The cylinder is included inside a box which can be positioned below the heat pump.

\*Only for sizes 21-81



- **100-litre circuit breaker**

Storage tank Fe360b with external insulation, equipped with 8 connections.



- **Back-up electrical heater**

The back-up electrical heater provide additional heating capacity during extremely cold outdoor temperatures operation conditions. Nominal capacity is 3 kW and it is adjustable. For indoor installation.

\*Only for sizes 21-81



# Typical Applications - Accessories

- **3-way valve kit for domestic hot water**

For the deviation of the water flow to a DHW heating storage tank. It can be managed directly by the unit.

- **Hose kit for connection to the heat pump**

Length 300mm, necessary for the connection of the unit to the plant.



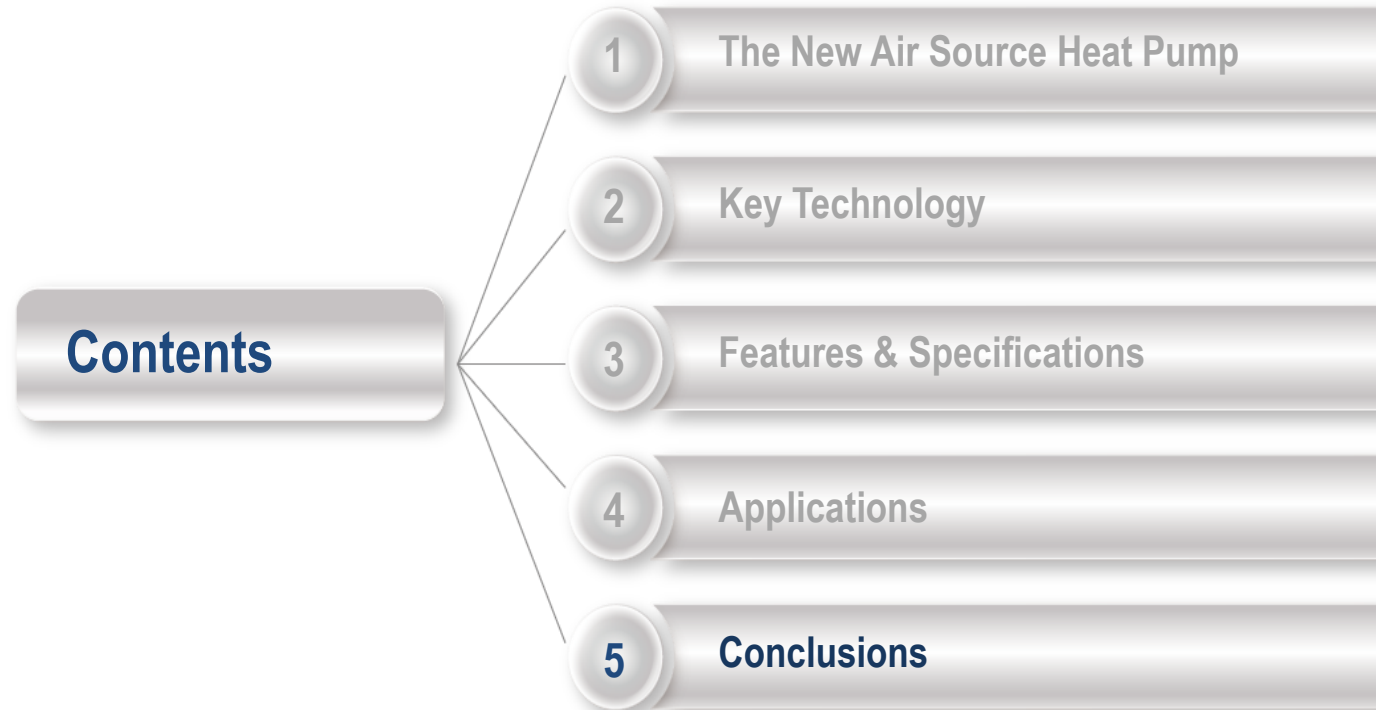
- **300-litre and 500-litre DHW storage tank**

Carbon steel storage tank with external insulation, equipped with anodic protection and 3 kW (single phase) electric heater with safety thermostat.

Also available with solar coil.

\*Only for sizes 21-101





## ELFOEnergy Edge EVO: the best features for heating, cooling and domestic hot water production

- New R-32 refrigerant
- 10 models are available for ELFOEnergy Edge with 5-30 kW range
- Top performances for a even higher seasonal efficiency
  - A++/A+++ Class Heating LT (LWT 35°C)
  - A+/A++ Class Heating MT (LWT 55°C)
  - SEER up to 4,99: effective as a Chiller
- The most advanced Full DC technology
- All the features to offer a single integrated system
- Extended Operation Range down to -25°C to meet any working condition
- New functions and modalities for a complete comfort solution



DC Inverter



Thank you!

[www.clivet.com](http://www.clivet.com)



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Midea